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THE MORTALITY FROM CONSUMPTION IN SMALL CITIES.

By Frederick S. Crum.

The main purpose in this paper is to point out some of the many ways in which the registrars of vital statistics in small cities may render valuable service by making careful and detailed studies of local conditions as reflected in the mortality returns. I have purposely chosen small cities, first, because they have been long neglected, and heretofore attention has been directed almost wholly to the large cities, and, secondly, because the small cities often afford quite exceptional opportunities for the study of certain phenomena in the field of vital statistics, which, because of the size of the population and the large variety of conflicting influences, are rarely, if ever, afforded by the great cities. In the past there has been one very good reason why the small cities have received little attention from the students and investigators of vital statistics in this country. Until very recently, with certain important exceptions, the necessary data have not been available for small cities. This excuse, however, can no longer be offered, for the permanent Bureau of the Census, in its annual reports on mortality, has already compiled much valuable material for nearly three hundred cities of less than 50,000 population, and this information is now available for the six-year period 1900–05.

I hope and expect to see additions and improvements continually made in these mortality statistics, as they appear from year to year, but these expectations are to be realized only by the further extension of the registration area, by the incorporation in the reports of certain important additional details, and by the hearty co-operation of the local registrars throughout the country with the Division of Vital Statistics of the Bureau of the Census.

That the small city often affords exceptional opportunities for the study of the effects which various factors have upon the health and longevity of population, I shall hope to prove convincingly in the course of my argument. Suffice it now to say that any one, two, or more influences which may powerfully affect the health or mortality of a given population can best be isolated in a city of moderate size. An occupation or trade, for example, which is centred in a city of 10,000 population, is more readily studied in its effect upon the health of the men and women engaged therein than would be possible if the same numbers were employed in a city of 500,000 or 1,000,000 population. In the first place the facts pertaining to the health and mortality of the employees are more readily ascertainable in the small city, and, secondly, the influences of environment, such as latitude, climate, housing conditions, habits, etc., can be weighed better in small than in large cities.

For the basis of this study I have taken 209 registration cities, all but two of which, Pueblo, Col., and Sacramento, Cal., had an estimated population of less than 30,000 in 1905. Pueblo and Sacramento had less than 31,000 population, and they were included because they illustrate certain more or less typical facts. The cities selected may be considered fairly representative of their class for Northern and Western States. They are scattered over the country from Maine to California and from Wisconsin to Florida, but the Southern States are not well represented for the reason that the registration area is as yet very limited there and at the present time embraces only a comparatively few cities. The New England States, New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Wisconsin, and California contain the larger part of the small cities here considered, but other States, including Iowa, Kansas, Colorado, Minnesota, Kentucky, Maryland, Virginia, North Carolina, and Florida, are each represented by from one to three cities.

The mortality from consumption has been compiled for each of the 209 cities for the five-year period 1901–05. The original data for single years are to be found in the two census volumes,—"Mortality, 1900 to 1904" and "Mortality, 1905." The average annual mortality rates from consumption were found to vary from 426.7 per 100,000 of population in San Diego, Cal., to 21.4 in Leadville, Col., and the comparative rates, when arranged in the order of size, at once suggested that the differences might be largely accounted for by local differences in the age, sex, race, and nativity distribution of the populations, or by the peculiar physical or climatic features of the cities. Other pronounced factors, such as occupation, the presence in a city of a large institution for the care of the aged, hospitals for the insane, institutions for the treatment of consumptives, or a prison, or the reputation of the city as a health resort, have suggested possible explanations of the heavy mortality from consumption in certain cities. Obviously, the local registrar or health officer in a small city is in a position accurately to weigh and determine the importance of any or all of these factors which make for a high or low death-rate from consumption. By careful and detailed analysis of the population and the death returns the local registrar could often suggest why the death-rates from particular causes were high, and we have no doubt but that if the facts, when unfavorable, were properly presented, it would often be possible to secure immediate improvement in the local conditions responsible for the high mortality.

The general impression that tuberculosis is chiefly a disease of large cities is a false one, for it requires no very extended investigation to prove that, in proportion to population, a considerable number of our smaller towns and cities have relatively high death-rates from consumption, much higher, in fact, than the average for all cities, or for the larger cities combined, or for certain of the largest cities, such as New York, Philadelphia, and Chicago. The average death-rate from consumption in New York City during 1901–05 was 215.8 per 100,000 of population, but this average rate was exceeded in twenty-eight of the 209 small cities; in Philadelphia the average rate was 212.8, and this was exceeded in thirty-one of the small cities; and in Chicago the rate was 156.2, and this was exceeded in no less than eighty-five of the 209 cities here under consideration, and, in fact, the average rate for the 209 small cities combined was slightly higher than the Chicago rate.

The aggregate population exposed on the average one year to the risk of death during 1901–05 in the 209 small cities was 16,453,012. The average annual mortality rate from consumption was 157.6 per 100,000 of population, which compares with 191.5 for the population in the other larger cities of the registration area and 126.5 for the population in the rural parts of the registration States. The comparative figures are given in detail in the following summary table:—

MORTALITY FROM CONSUMPTION IN THE REGISTRATION AREA OF THE UNITED STATES, 1901–05.

Registration Area.	Population.	Mortality from Consumption.	
		Deaths.	Rates per 100,000.
The registration area	162,631,038	276,257	169.9
Cities with less than 30,000 population	16,453,012	25,927	157.6
Cities with more than 30,000 population	99,860,221	191,238	191.5
Rural part of registration States	46,317,805	58,572	126.5

In other words, the death-rate from consumption in the small cities was 21.0 per cent. higher than in the rural districts and 21.5 per cent. lower than in the cities with over 30,000 population. If the same average rate had prevailed in the small cities as in the rural districts, there would have been an aggregate saving or prolonging of 5,445 lives from death by consumption during the five years, or an average saving of 1,089 lives per year. On the other hand, if the same rate had prevailed in the small as in the large cities, there would have been an additional loss of life over that actually reported of 5,527 during the five years, or an average of 1,115 per year. These illustrations show that the small cities, in the aggregate, in respect of their mortality rates from consumption stand about half-way between the cities with over 30,000 population and the rural districts.

There is abundant evidence that the mortality from consumption is abnormally high in certain rural districts, and it is an open question whether a death-rate from consumption above fifty per 100,000 of population is not excessive for either the city or country. In two of the small cities—Leadville, Col., and Plymouth, Pa.—the average annual rates during 1901–05 were less than fifty, or 21.4 and 29.4 respectively. For several other cities the rate fell below fifty during one or more of the years of the five-year period, and in no less than thirty of the 209 cities the average rate was less than 100.0 per 100,000 of population.

It is of interest to note that, if the average annual death-rate from consumption were 50.0 per 100,000 of population, there would be at the present time an annual saving or prolonging of approximately 3,540 lives in the 209 cities here under consideration, an annual saving of about 40,000 lives in the whole registration area, and an annual saving of well over 100,000 lives in the continental United States. I need hardly add that this possible ideal is certainly well worth all the labor and expense necessary for its attainment.

In the five-year period 1901–05 there has been a noticeable decline in the death-rate from consumption, when the cities are considered in the aggregate, and, as shown in the following table, the rate has declined from 170.0 in 1901 to 151.3 in 1905:—

MORTALITY FROM CONSUMPTION IN 209 SMALL CITIES IN THE REGISTRATION AREA OF THE UNITED STATES, 1901–05.

Year.	Population.	Number of Deaths.	Deaths per 100,000 of Population.
1901	3,166,949	5,383	170.0
1902	3,228,206	5,094	157.8
1903	3,291,585	4,864	147.8
1904	3,352,970	5,420	161.6
1905	3,413,302	5,166	151.3
1901–05	16,453,012	25,927	153.8

Considering the cities individually I find that 84 had a higher and 125 a lower death-rate from consumption in 1905 than in 1901. The general tendency of the rate seems, therefore, to have been downward, but the decline in the mortality from consumption may be expected to continue even more rapidly in the future, for undoubtedly the rate is at present at least three times as high as it should be.

The mortality from consumption in a particular locality is sometimes materially affected by the age distribution of the population. From the census of 1900 we learn that, while the death-rate from this cause was only 44.1 per 100,000 of population at ages under fifteen, the rate was 278.2 at ages sixty-five and over. Any abnormal age distribution of the population, such as a large or small proportion of persons at the very young or very old ages, would therefore materially affect the general death-rate from consumption. It is impossible to give details of the age distribution of the population of the small cities, as the facts were not reported for cities of less than 25,000 population in the census of 1900. I have, however, been able to calculate the percentage of the population at ages under five for all but eleven cities in Indiana. These original figures are to be found in Table 19 of "Vital Statistics," Part I, United States Census of 1900. I find that the average was 9.5 per cent. for the 209 cities in the aggregate, but that the percentages varied from 17.9 for Ironwood, Mich., and 16.5 for Berlin, N.H., to 6.2 for Ann Arbor, Mich., and 6.4 for Ithaca, N.Y. The low percentages of children in Ann Arbor and Ithaca suggest that the college population in those cities unduly increase the proportion of adults, and in consequence reduce the percentage of children to the total population. In cities such as Lafayette and Marion, Ind., and Leavenworth, Kan., the proportion of persons at advanced ages is unduly large, owing to the presence of institutions for the care and treatment of aged, disabled, and dependent soldiers, and among these the mortality rate from consumption is sufficiently high to materially affect the general rate, and I find that the mortality rate from consumption was 223.8 for Lafayette, Ind., 158.5 for Marion, Ind., and 153.3 for Leavenworth, Kan.* So far as I am able to learn, there are no institutions for the care of children of sufficient importance to materially affect the age distribution of the population of any of the 209 small cities here under consideration.

As regards sex, the available facts seem to indicate that consumption is, on the whole, somewhat more fatal among males than among females. There is good reason to believe, however, that the difference is not due to sex *per se*, but rather to other incidental factors, such as occupation, habits, etc. This assumption finds support in the fact that, while in cities the death-rates are exceptionally unfavorable to the males as compared with the females, in the rural districts the rates are actually higher among the females than among the males. It would carry me too far to go into this subject in any detail, and I will therefore pass it by with the remark that, so far as I have been able to judge, from a somewhat careful analysis of the statistics of the 209 small cities, the factor of sex distribution is one of minor importance in explaining the differences in the death-rates from consumption.

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* In the various branches of the National Home for Disabled Volunteer Soldiers the average annual death-rate from consumption per 100,000 of inmates was 625.5 during the five years 1900–04.

One of the most important factors to be considered in any comparative study of death-rates from consumption is race. This is a factor of special importance in nearly all Southern cities, where a large proportion of the total population are negroes, and in certain of the Northern cities—such as Leavenworth, Kan.; Steelton and Carlisle, Pa.; Montclair, Plainfield, Orange, Morristown, and Bridgeton, N.J.; New Albany and Richmond, Ind.; Ironton, Chillicothe, and Portsmouth, Ohio; Newport, R.I.; Jacksonville, Ill.; and Portsmouth, Ohio—the negro element is of sufficient importance to merit careful inquiry. In the following table the twenty-five cities with the largest proportion of negro population are given in the order of importance of the negro element, together with the general death-rates from consumption:—

TWENTY-FIVE SMALL CITIES WITH OVER FIVE PER CENT. OF NEGRO POPULATION IN 1900.

Cities.	Total Population, 1900.	Negro Population, 1900.	Per Cent. Negroes.	Death-rates from Consumption (1901-05).
Wilmington, N.C.	20,796	10,407	49·61	234.3
Petersburg, Va.	21,810	10,751	49.29	348.5
Lynchburg, Va.	18,891	8,254	43.69	252.0
Raleigh, N.C.	13,643	5,721	41.93	343.0
Annapolis, Md.	8,525	3,002	35.21	331.8
Key West, Fla.	17,114	5,562	32.50	300.9
Alexandria, Va.	14,528	4,533	31·20	259.2
Paducah, Ky.	19,446	5,814	29.90	327.4
Frederick, Md.	9,296	1,535	16.51	270.1
Leavenworth, Kan.	20,735	2,925	14.10	153.3
Steelton, Pa.	12,086	1,508	12.47	164.6
Carlisle, Pa.	9,626	1,148	11.93	183.7
Montclair, N.J.	13,962	1,344	9.63	123.3
Plainfield, N.J.	15,369	1,450	9.43	190.4
New Albany, Ind.	20,628	1,905	9.23	234.6
Orange, N.J.	24,141	1,903	7.88	289.9
Ironton, Ohio	11,868	924	7.79	246.1
Chillicothe, Ohio	12,976	986	7.60	182.5
Newport, R.I.	22,034	1,613	7.32	141.7
Morristown, N.J.	11,267	815	7.23	191.6
Jacksonville, Ill.	15,078	1,818	6.61	237.9
Richmond, Ind.	18,226	1,009	5.54	175.6
Portsmouth, Ohio	17,870	947	5.30	210.4
New Rochelle, N.Y.	14,720	777	5.28	94.9
Bridgeton, N.J.	13,913	701	5.04	160.1
Total for 209 cities	3,099,286	110,560	3.57	157.6

All but four of the twenty-five cities had a death-rate from consumption in excess of the average for the 209 cities combined, and the rate was considerably in excess in the nine Southern cities, in all of which the negro element constituted over fifteen per cent. of the total population in 1900. In Wilmington, N.C., and Lynchburg, Va., the negroes were nearly one-half of the total population, and in the nine Southern cities combined the negroes represented 38.6 per cent. of the total population.

From all the reliable data available it appears that consumption is much more prevalent and fatal among negroes than among the white population, and this is true in the North as well as in the South. According to the census of 1900 the average mortality rate from consumption among the negro population in the registration area was 485.4 per 100,000 of population against a rate of only 173.5 for the white element of the population, or the mortality from consumption among the negroes was 180.0 per cent. in excess of that for the white population. The mortality from consumption among negroes is excessive at all ages, and, when the negro element forms any considerable part of the total population of a given locality, the mortality returns should make distinction of color or race and the death-rates should be separately calculated, otherwise the mortality record will be incomplete and the death-rates are likely to be of little value, if not positively misleading.

The vital statistics of the negro is a subject of great social importance, and there is no valid reason why much better and more determining data should not long since have been available to students of the subject. For three of the nine small cities with a large proportion of negro population the local health reports give the returns with distinction of color and principal causes of death. The State biennial health reports of North Carolina contain the data for Raleigh and Wilmington, and the city health reports give the same information for Petersburg, Va. As a rule, however, there is a lamentable lack of interest shown in this important subject.

In the Tenth Biennial Report of the State Board of Health of North Carolina (1903–04) we find the following statement (p. 87): "The scourge of the colored race remains tuberculosis. . . . The death-rate from consumption in the two races is as 1 to 2.6. With slight variation this proportion has been quite constant for years." In another portion of the report (p. 67) there is reprinted a letter which was sent by the Secretary of the Board of Health to all colored teachers in North Carolina, urging them to take an active part in the work of educating their race in the methods of prevention. From that letter I quote the following: "Pulmonary tuberculosis, or consumption, as it is commonly called, has come to be the bane of the colored race. It is the most fatal of all diseases to every race, but it is especially so among the colored people, being nearly three times as fatal to them as to the whites. It is, therefore, especially important to your people that every effort should be made to check the ravages of this dreadful disease. Being a contagious disease, it can be prevented by following carefully the directions which are fully set forth in the pamphlet on the subject issued by the State Board of Health, a copy of which is enclosed."

The local reports for Petersburg, Va., show that during 1901–05 the mortality rate from consumption for the negroes was 403.6 per 100,000 of population, and for the white population the rate was 247.8. Making due allowance for the presence in Petersburg of the Central Hospital for the Insane with an average population of about 1,000, among whom the mortality from consumption is presumably in excess of that in the outside population, I still am convinced that the rate of 247.8 for the white population is far above what should constitute a normal rate. The local registrar or health officer could undoubtedly throw considerable light upon the facts if he were so disposed, but there is not a line of comment upon the facts in any of the reports which have come to my notice.

In Lynchburg, Va., the returns are not given with distinction of color, but in the report of the Board of Health for 1902 I find the following comment:—

"The mortality among the colored race continues to exceed that of the white by almost one-third, which we attribute to their mode of living and want of cleanliness. We have used our best efforts to induce them to lead a more cleanly and sanitary life, but they still disregard our injunctions and continue in filth and dissipation of all sorts. Many, however, live a cleanly, sanitary, and respectable life, and the superior healthfulness of this class is very manifest, and proves the importance of this mode of life.

"Most of the houses of the white population have been kept in good sanitary condition, but it is not so in regard to the colored population. Many of their homes are in an unsightly and unhealthy condition, which is manifested by the greater number of deaths among them than among the whites and the better class of their race."

There is abundant opportunity for valuable contributions to our knowledge of the vital statistics of the negro, and the local registrars are the proper authorities to perform this service. As already pointed out, several of the small Northern cities contain enough negroes to make it well worth while to report their mortality separately, and, until this is done, it will be impossible to judge fairly of the relative healthfulness of such cities as Montclair, Morristown, and Orange, N.J., Carlisle, Pa., New Albany, Ind., Ironton, Ohio, or Newport, R.I.

It is important also to know what effect a high death-rate from consumption among the negro element has upon the death-rate of the white population, and this question cannot be definitely answered without fuller information.*

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* Of course there are other factors besides negro population that are favorable to a high mortality rate from consumption in some of the Southern cities. Low altitude, humid climate, made ground, and unhealthful occupations are met with in the South as well as in the North. In Key West, Fla., for example, in addition to the large negro population, there are a considerable number of Cubans who seem to be more subject to consumption than native Americans. In Key West, also, the cigar and cigarette industry is the leading employment, some two thousand or more wage-earners being employed. Cigar and cigarette makers are subject to a heavy mortality from consumption, and the death-rates from tuberculosis are excessive at all ages.

In Florida the State Board of Health has long been engaged in an anti-spitting cru-

The mortality from consumption among the Chinese, Japanese, and Indians, is also excessive as compared with the white population. According to the census of 1900 the rates per 100,000 of population were 656.8 for the Chinese, 239.6 for the Japanese, and 506.8 for the Indians in the registration area. Of course, these rates are unfavorably affected by the fact of an unduly high proportion of adults, but this unfavorable age distribution is a general characteristic, particularly of the Chinese and Japanese, in this country, and therefore operates to increase the general death-rate from consumption wherever these races are present in large numbers. The Chinese are of sufficient importance in certain cities in California to materially affect the local death-rates. In Fresno in 1900 the Chinese constituted 8.9 per cent. of the total population; in Sacramento, 3.6 per cent.; in San José, 2.6 per cent.; in Alameda, 1.8 per cent.; and in San Diego, 1.7 per cent. In addition to the comparatively large Chinese population the Japanese in Fresno formed 1.4 per cent. of the total population, and in Sacramento 1.2 per cent. In four of these California cities the mortality from consumption during 1901–05 was comparatively high, being 426.7 for San Diego, 285.9 for Sacramento, 261.8 for San José, and 251.4 for Fresno.

The local registrars in small cities where there are Chinese and Japanese in comparatively large numbers could render a valuable public and social service by reporting the mortality among these classes in detail by age, sex, and causes of death. In the monthly health reports of San Diego and Sacramento the total deaths are reported with distinction of the four races,—Caucasian, African, Mongolian, and Indian,—but no details are given under this classification for age, sex, or causes of death. Precedents have been established, however, in the larger cities of San Francisco and Los Angeles, where the annual health reports show the principal causes of death with distinction of race. In San Francisco

sade. In the Sixteenth Annual Report of that body (1905) the statement was made that "the rule is generally adopted in the cigar factories in Key West that spitting on the floor, or in any place but in a cuspidor, warrants a discharge of the operator. Each table in the cigar manufacturing room is supplied with a cuspidor which the cigar maker is compelled to use. The Ruy Lopez factory at Key West was the first to adopt this cleanly method, in compliance with the State Board's request, and the practice is now universally adopted by all other manufacturers. The innovation upon former uncleanly methods of promiscuous expectoration on the floors was resisted at first, but a little firmness, combined with kindly persuasion and explanation, overcame all objections, and it is now thought that the operatives themselves would be decidedly unwilling to return to former uncleanly habits."

These facts are of interest as indicating the practical utility of local statistics of sickness and mortality in any similar effort to bring about sanitary reforms in any particular industry or locality. Employers and employees are usually open to suggestions for sanitary reforms if the suggestions are accompanied by reliable facts which indicate the strong probability of improved health when the reforms shall have been effected.

during the year 1905 there were 118 deaths from consumption among the Chinese, or equivalent to a rate of 1,207 per 100,000 of population, or over 12 per 1,000 of population, assuming that the Chinese were of the same proportionate strength in the population in 1905 as in 1900 and that the total population increased at the same rate during 1900–05 as during the intercensal decade 1890–1900. In Los Angeles during 1901–05 there were 101 deaths from consumption among the Chinese and Japanese, these races not being separated in the returns. We have no way of determining the exact number of the Chinese and Japanese exposed on the average one year to the risk of death, but, if we assume that the percentage of these elements to the total population in Los Angeles during 1901–05 remained approximately the same as in 1900, the death-rate from consumption was over 1,100 per 100,000, or more than 11 per 1,000 of population. It is of the utmost importance to know with more certainty what the death-rates from consumption is among the Chinese and Japanese in this country. If the actual conditions are as bad as they appear to be from the fragmentary data now available, it behooves the health or other responsible authorities to make the facts known, so that drastic measures may be taken to restrict the spread of the disease from these danger spots and so far as possible to eradicate the sources of infection by a more rigid enforcement of the health and sanitary laws among these elements of the population.

Among the foreign born the mortality from consumption is often very heavy, and the rate varies considerably among the different nativities. According to the census of 1900, at ages 15–44, the average rate per 100,000 of population was 428.0 for persons of Irish birth, 235.2 for Bohemians, 233.7 for Scandinavians, 220.6 for the French, 205.9 for Germans, 201.1 for the Scotch, and 199.7 for Canadians. For the white population of native birth the rate was only 162.5 at ages 15–44. It would carry me too far to go into the subject of nativity in its relation to consumption in any detail, but the facts stated indicate that in any locality with a large proportion of persons of foreign birth the crude death-rate from consumption is likely to be considerably higher than in another locality, similar in other respects, but with a population practically all of native birth.*

The physical characteristics of a locality often exert a considerable influence upon the general death-rate, and, as a rule, the death-rate from certain causes of death, such as malaria, typhoid fever, consumption, and respiratory diseases, reflect more clearly than others the influence upon health of climate, latitude, and topography, including altitude, natural drainage, character of the soil, etc. Obviously, it would require more time and space than I have at my command to discuss all of these factors as they are illustrated in the mortality from consumption in the 209 cities with which I am at present concerned. Thanks to the good work of the United States Geological Survey and the Bureau of Soils of the Department of Agriculture, the facts of topography are rapidly becoming available, and the soil survey reports especially should be of great value to sanitarians, health officials, and physicians.

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* The foreign-born element in the total population ranged from 1.8 per cent. in Carlisle, Pa., to 58.4 per cent. in Chicopee, Mass. There were eleven cities with more than 40.0 per cent. of foreign-born population, and ninety-seven with more than 20 per cent. In any valuable analysis of the mortality from consumption in its relation to nativity it would be necessary to know the relative importance of the various nativities in any particular locality. These facts are not obtainable in the census of 1900 for cities of less than 25,000 population.

I shall attempt here to deal briefly with only one topographic fact in its relation to the mortality from consumption. We now know with approximate accuracy the altitude of practically every place of importance in the United States, and the facts are available in the Dictionary of Altitudes, compiled by Mr. Henry Gannett, United States Geographer. When more than one elevation is given, I have taken the average as probably best representing the true altitude of the city as a whole. For Ithaca, N.Y., for example, four observations are reported in the Dictionary of Altitudes. The extremes are 381 feet at the water surface of Cayuga Lake and 836 feet at the Weather Bureau, which is the Civil Engineering Building on the Cornell University Campus. The altitude, or elevation, is given for two other intermediate points, and the average of the four elevations is 611 feet, which perhaps represents as nearly as possible the average altitude of the city as a whole, a considerable part of which is built on east, south, and west hills. For certain New England *towns* the elevation given for the principal city in the town has been taken as the best approximation for the town as a whole. In considering this factor of altitude, I have discarded the nine cities with over fifteen per cent. of negro population, and arranged the remaining 200 cities in eleven groups, the first group including cities of less than 100 feet elevation, the second of from 100 to 199 feet, the third of from 200 to 299 feet, and so on to the last group, which includes all the cities at an altitude of 1,000 feet or more. The following table gives the facts in detail, including a summary statement of the mortality in three larger groups of cities, those with altitudes of less than 500 feet, with altitudes of from 500 to 1,000 feet, and with altitudes over 1,000 feet:—

MORTALITY FROM CONSUMPTION IN 200 SMALL CITIES OF THE REGISTRATION AREA, 1901–05.

(Cities Arranged by Altitude.)

Altitude in Feet.	Number of Cities.	Aggregate Population.	Number of Deaths.	Deaths per 100,000.
Under 100 feet	53	4,400,522	7,452	169.4
100–199	18	1,568,465	2,657	169.4
200–299	14	981,723	1,604	163.4
300–399	5	342,391	560	163.6
400–499	16	971,312	1,555	160.1
500–599	25	2,121,306	2,943	138.8
600–699	20	1,463,528	1,988	135.8
700–799	16	1.127,495	1,537	136.3
800–899	10	984,112	1,299	132.0
900–999	6	519,232	664	127.9
1,000 and over	17	1,215,641	1,434	117.9
Under 500 ft.	106	8,264,413	13,828	167.3
500–999	77	6,215,673	8,431	135.7
1,000 and over	17	1,215,641	1,434	117.9
Total	200	15,695,727	23,693	151.0

The statistics show that there is a close relation between altitude and mortality from consumption, and the death-rates decline with quite remarkable regularity as the altitude increases. There are many disturbing factors, such as health resorts, occupations, etc., which operate to offset the favorable influence of altitude, but notwithstanding these the table shows that the effect of elevation is strong enough to make itself felt in the death-rates when the populations are sufficiently large to give a fair average. Some cities with comparatively high altitudes have relatively high mortality rates from consumption, but in such cases there is always a disturbing factor of sufficient importance to outweigh the favorable effect of altitude, and it is safe to assume that the rates would be higher if the cities were at appreciably lower altitudes.

The effect of altitude upon the mortality from consumption is perhaps best shown by grouping the cities into two equal or nearly equal divisions in such States as are sufficiently well represented to make such a classification possible. The result of this method is shown in the following table:—

MORTALITY FROM CONSUMPTION IN SMALL CITIES, 1901–05.

(Cities Arranged by Altitude and by States.)

States.	Altitude.	Number of Cities.	Population.	Number of Deaths.	Deaths per 100,000 of Population.
Connecticut	Under 100 ft.	9	735,935	1,230	167.1
	Over 100 ft.	7	429,385	667	155.3
Indiana	Under 700 ft.	10	685,679	1,304	190.2
	Over 700 ft.	9	749,305	1,199	160.0
Massachusetts	Under 100 ft.	20	1,602,356	2,280	142.3
	Over 100 ft.	17	1,134,418	1,672	147.4
Michigan	Under 750 ft.	9	595,017	625	105.0
	Over 750 ft.	8	609,001	586	96.2
New Hampshire. . .	Under 250 ft.	4	291,375	507	174.0
	Over 250 ft.	4	242,890	319	131.3
New Jersey	Under 100 ft.	5	407,663	560	137.4
	Over 100 ft.	6	490,272	928	189.3
New York	Under 450 ft.	14	1,292,870	2,302	178.1
	Over 450 ft.	14	1,071,727	1,199	111.9
Ohio	Under 700 ft.	8	594,100	986	166.0
	Over 700 ft.	5	428,412	611	142.6
Pennsylvania	Under 600 ft.	8	656,146	977	148.9
	Over 600 ft.	7	477,978	384	80.3
Wisconsin	Under 700 ft.	3	246,152	308	125.1
	Over 700 ft.	4	352,078	419	119.0

This table requires no extended comment. It is quite clearly shown that altitude is an important factor in any consideration of the comparative mortality from consumption in small cities. The differences in the rates for cities of low as compared with cities of relatively high elevations are too pronounced to admit of any doubt as to the salutary effect of high altitude, and the statistics confirm the general opinion that low ground and a generally damp or humid atmosphere increase the liability to consumption, while high ground and a generally dry and rarefied atmosphere are favorable to a low mortality from tuberculosis. In Massachusetts and New Jersey the rates for the cities located at relatively high altitudes are higher than for the cities of low elevation, but these apparent exceptions are the result of other important factors, such as occupation, which affect the rates sufficiently to more than balance the favorable effect of the higher elevations.

That consumption is a frequent cause of death in institutions, such as almshouses, insane asylums, and prisons, is a fact well known to all who are familiar with the mortality returns of such institutions. During a twelve-year period the average annual mortality from consumption in four representative State hospitals for the insane * was 805.0 per 100,000 of inmates exposed on the average one year. These statistics show a progressive improvement in the sanitary conditions, however, and the rate during the last six years of the period was 701.3 as compared with 923.6 during the first six years.

In seven representative State prisons † the mortality rate from consumption during twelve years averaged 605.0 per 100,000 of inmates. In these institutions, in the aggregate, the rate declined from 760.3 during the first six years to 549.8 during the last six years. Whenever a large almshouse, prison, insane asylum, soldiers' home, or other institution for the more or less permanent care or treatment of the adult and aged, is found in a small city, the general death-rate from consumption is almost certain to be appreciably affected by its presence.

In Ogdensburg, N.Y., there is a large State hospital for the insane, and the death-rate from consumption for that city was 291.3 during 1901–05; in Danvers, Mass., there is also a large hospital for the insane, and the rate was 284.6; in Norristown, Pa., there is located a State hospital for the insane, with a yearly average of nearly 2,500 patients, and the rate was 275.6; in Middletown, Conn., there is a State hospital for the insane, and the rate was 254.3; and in Jacksonville, Ill., which contains the Central Hospital for the Insane, with an average of about 1,500 patients, the general death-rate from consumption was 237.9. We might go further with our illustrations, but they will occur to any one, and those given will suffice for the present purpose.

It is self-evident that, if a city contains a large hospital for the special treatment of consumptives or a general hospital to which are attracted a considerable number of non-resident, consumptive patients, the death-rate from consumption is likely to be appreciably affected. So far as I have been able to discover, there are no such institutions in the 209 cities with which I am dealing, or at least there is none of sufficient importance to materially affect either the general death-rate or the death-rate from consumption. There are, however, certain cities which, because of their fame as health resorts, attract invalids, including consumptives, from all parts of the United States. Among these are San Diego, San José and Sacramento, Cal., Pueblo, Col., and Saratoga

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* New Jersey State Hospital, Central Hospital, Illinois, State Hospital, Utica, N.Y., State Hospital, Wisconsin, 1891–1902.

† Sacramento, Cal., Joliet, Ill., Charlestown, Mass., Philadelphia, Pa., Columbus, Ohio, Ossining, N.Y., and Clinton State Prison, New York, 1891–1902.

Springs, N.Y. All of these cities have excessively high mortality rates from consumption. The rates in the California cities are also unfavorably affected by the Chinese element, as has previously been pointed out, and, largely as a result of the two factors, San Diego heads the list of the 209 small cities, with a rate of 426.7. Pueblo is fourth, with a rate of 338.1, and it is second, if we exclude the two cities of Petersburg, Va., and Raleigh, N.C., where the negro element is a predominating factor. The high rate of 211.5 for Saratoga Springs is clearly the effect of the large invalid non-resident population.

It would materially increase our knowledge and serve a very practical and useful purpose if the local registrars would make careful note of the mortality by causes in the important institutions within their respective jurisdictions, and in cities like Pueblo, Col., and Saratoga Springs, N.Y., the deaths of the non-resident population should be distinguished from the deaths of the resident population. It would be desirable to have this distinction made in all cities, but it is of special importance in cities where there are large numbers of non-resident invalid persons. There can be no question of doubt but that the presence of a large number of pulmonary invalids scattered throughout a city, itself normally comparatively free from the disease, must constitute a menace to the health of the resident population. There can be no doubt but that there is a gradual spread of infection where pulmonary invalids are permitted to live in boarding-houses or hotels without a most careful medical supervision, and there is probably no stronger argument in favor of sanatoria for the treatment of incipient or advanced cases of consumption than the fact that without supervision and control the disease is spread from the infected to the uninfected, and localities formerly almost free from consumption finally become a menace to the health of the local population. The importance of these facts can only become generally known by a more adequate presentation and analysis of the mortality by the local registrars.

Certain occupations have a marked effect upon the health and mortality of those employed therein. This general fact was established long ago, but much still remains to be done before sufficient data will be available to make it possible to get at the real facts of health and longevity as affected by the various trades and occupations. There is a dearth of material in this country along these lines, and this is particularly unfortunate, because we cannot be guided by English or European experience in these matters, for the conditions here are generally very different from those which obtain in the older countries. There is not a single city in the United States which has published trade mortality statistics in the excellent manner in which this has been done in the health reports of Blackburn and Sheffield, England. There are some fragmentary data available in certain local reports of this country, of which I may mention the Registration Reports of Rhode Island and the State Health Reports of Vermont. But, generally speaking, no emphasis whatever has been placed upon this important phase of vital statistics in this country, and this is the more remarkable because of the many excellent opportunities for good work along these lines in many of our small cities where important and more or less health-injurious trades are centred.* The information relating to mortality by occupations compiled in the Eleventh and Twelfth Censuses of the United States are good so far as they go, but they do not go far enough to serve the most useful and practical purposes. The terms are too general, and the groupings are either too large or too indefinite to permit of accurate conclusions as to the relative healthfulness of specific employments. We cannot expect a census to yield the most important results along these lines of inquiry. The census should give the facts as to the number of employees, but the local registrars or health officers must furnish the necessary details as to age, sex, and causes of death among the employees in at least the more important industries centred in their respective cities.

Of all the diseases affected by occupation, the one most generally affected is consumption. This disease is more common among employees in dusty trades than in trades free from dust; and it is more frequent among persons engaged in sedentary employments, such as book-keeping, than among persons, like farmers, who live an outdoor life of manual labor. There seems to be little doubt but that the mortality rate from consumption in small cities is materially affected by certain predisposing occupations which, in several instances, are sufficiently prominent to be an important factor in the mortality. The mortality rate from consumption in Orange, N.J., was 289.9 as compared with the average of 151.0 for the 200 cities (excluding the nine cities with large negro populations), or the rate of Orange represented an excess over the average of 138.9 per 100,000 of population. A considerable part of this excess was undoubtedly the result of employment in the felt-hat industry. The making of felt hats is generally recognized to be a health-injurious trade, and the mortality from consumption and respiratory diseases among hatters is high at all ages. In 1905 there were 1,379 employees engaged in the felt-hat industry in Orange,—a number sufficiently large in proportion to the total population to quite materially affect the local death-rate.

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* In the introduction to that very useful work, "The Hygiene, Diseases, and Mortality of Occupations," Dr. J. T. Arlidge, in reviewing the history and sources of the materials which he had been able to gather, remarks: "One source of the information sought might fairly be looked for in the reports issued by the medical officers of health in the various towns, but, so far as these documents have fallen under my notice, they have proved barren. It is, to my mind, an indication that the importance of noting industrial diseases and estimating their influence on the public health and mortality has not as yet been recognized. The reports of Dr. Sinclair White, formerly medical officer of health at Sheffield, constituted a noteworthy exception. He presented special memoranda on the health of Sheffield artisans. His successor in that town, Dr. Theodore Thomson, followed his example during the time he held office." Dr. Arlidge's book was published in 1892, and the good work at Blackburn was only in its beginning. The Blackburn reports have proven to be for the cotton-mill operatives what the Sheffield reports have been for the file and cutlery artisans. Both have served a very useful purpose in helping to bring about notable improvements in the conditions of employment, and these in turn have resulted in a reduction of the death-rates compared with those which formerly prevailed.

In Barre, Vt., the average annual mortality rate from consumption during 1901–05 was 205.4 per 100,000 of population, or an excess above the average of 54.4. This city is at an altitude of 515 feet in the hill section of Northern Vermont, where the general health and sanitary conditions are excellent. But the stone-cutting industry is centred at Barre, and in this industry there is an extraordinary prevalence of consumption. The biennial reports of the State Board of Health of Vermont show that in Washington County during the six years 1900–05 there were 137 deaths of stone-cutters, 66, or 46.7 per cent. of which, were due to consumption, and 20, or 15.3 per cent., were due to respiratory diseases. We do not know how many persons are employed at stone-cutting in Barre, but it is the principal employment, and the local physicians distinctly recognize what they designate as "stone-cutters' consumption."

Amsterdam, Cohoes, and Middletown, N.Y., are centres for the manufacture of hosiery and knit goods, and it would be an important addition to our knowledge of the vital statistics of knitting-mill employees if the facts were available, showing their mortality in detail.

In several other small cities in New England, New York, New Jersey, and Pennsylvania, textile trades are of local importance. In New England the cotton mills employ thousands of men and women; in Jamestown, N.Y., nearly 2,000 are employed in worsted mills; and in Norristown, Pa., nearly 1,500 are employed in knitting and woollen mills. The health officers or local registrars in these cities should make themselves familiar with the health reports of Blackburn, England, which for nearly twenty years have contained the detail mortality statistics of cotton-mill operatives. That the Blackburn returns have been of great benefit is testified to by employers, employees, factory inspectors, and all those who are familiar with British factory legislation and the reduction in mortality effected thereby, particularly among cotton weavers.

In the coal mining towns and cities and in the metal mining centres detailed statistics of mortality from diseases among miners are urgently needed to supplement the data showing deaths by accident. Among the 209 small cities there are several which contain a large proportion of coal or metal miners. There seems to be a considerable difference in the mortality from consumption among coal miners as compared with metal miners, including iron, copper, lead and zinc, and the precious metals. This is what we would theoretically expect, but it is one thing to know, in a general way, that there is a difference, and it is quite another and more important thing to know exactly what the difference is from reliable local returns. The registrars or health officers in such cities as Mahanoy City, Carbondale, and Hazleton, Pa., and Iron Mountain, Ironwood, and Ishpeming, Mich., could render an extremely valuable service along this line if only they were so disposed.

In nearly all of the small cities there are one or more occupations for which additional information as to health conditions and mortality would serve a very useful and practical purpose. For example, there are trolley systems in nearly all of the cities, and it is of importance to know the relative mortality from consumption among the street-car conductors and motormen compared with the general population of approximately the same ages. From the viewpoint of public hygiene this information would serve a highly useful purpose.

Among other important occupations met with in all cities, and with more or less excessive death-rates from consumption, I may mention bakers and printers. It is a matter of the greatest concern to the bread and cake eating public that the bakeries be made as cleanly, well ventilated, and generally healthful as possible. If the bakers in any given city are dying from consumption in such numbers as to indicate bad conditions in their bake-shops, the facts should be made known, and it is the imperative duty of the registrars of vital statistics to see to it that the relation between cause and effect is made public, so that proper pressure may be brought to bear to bring about the necessary improvements. Health officers should be co-workers and in entire harmony with the factory inspectors in these matters.

That the mortality from consumption among printers is excessive is quite generally known, but, if there were more reliable statistics of their mortality by causes and by age, the data would serve a useful purpose in any effort, by legislation or otherwise, to improve the conditions in printing establishments. In this connection we may call attention to a note on the health of printers in the *Bulletin of the Department of Labor* of New York for June, 1907. A special report on the "Health of Printers" will appear also in the forthcoming Twenty-fourth Annual Report of the Bureau of Labor Statistics of New York.

I do not need to add further details at the present time. I think that the facts presented are sufficient to prove that the opportunities for useful contributions to our knowledge of vital statistics which are open to health officers and registrars in the small cities of this country are quite as numerous and important as in the large cities. What are needed most at the present time are men with the ambition and talent, patience and industry, to dig out the facts from the mines of information which lie everywhere about them.

Addison, in his remarkable essay entitled "The Visions of Mirzah," depicted the span of life from birth to death, as a more or less dilapidated bridge leading across a chasm through which raged a turbulent and destructive tide. The crossing of this bridge was represented to be at best a hazardous undertaking, and, of the many who found themselves on the approach, comparatively few succeeded in reaching the far extremity. We may carry this simile a little farther, and liken the registrars of vital statistics to the life-bridge inspectors. It is their peculiar privilege and imperative duty to make careful and diligent inquiry into all the facts of mortality, and to point out, when necessary, the weak points and hidden pitfalls in the bridge which require strengthening and repair. It is their business to see to it that as many as possible of all those who once get on the bridge may succeed in crossing it safely. Their work will be successful only in so far as they report the facts of mortality in sufficient detail to make possible the accurate location of the places which require repair.

I trust that I have succeeded in indicating a few of the ways in which good and much-needed work can be performed by the collectors and custodians of death certificates in our small cities. The work to be done requires that the position of health officer or registrar of vital statistics shall be a more permanent one than is possible if it is to continue to be the football of politics. It is difficult to imagine a more important work than that intrusted to health officers. Upon their efficiency largely depends the health of the community, than which nothing is of greater importance. When we awake to a full realization of this fact, we may hope to see the health officers of this country holding their positions solely because of their fitness, and then, and not until then, can we expect to get the best information from the local mortality records, and be in a position more fully to understand all the complicated facts relating to the health and longevity of our population through all its progress over the hundred more or less broken arches of the bridge of human life.

TABLE I.

MORTALITY FROM CONSUMPTION IN 209 SMALL CITIES OF THE UNITED STATES, 1901–05.

Cities.	Population (1901–05).	Deaths from Consumption.		Deaths from All Causes.		Per Cent. of Total Deaths due to Consumption.
		Number.	Rates. per 100,000 Population.	Number.	Rates. per 1,000 Population.	
Adams (town), Mass.	59,723	100	167.4	998	16.7	10.0
Alameda, Cal.	90,270	114	126.3	1,235	13.7	9.2
Alexandria, Va.	72,925	189	259.2	1,616	22.2	11.7
Amesbury (town), Mass.	45,469	81	178.1	745	16.4	10.9
Amsterdam, N.Y.	115,381	170	147.3	1,784	15.5	9.5
Anderson, Ind.	115,050	200	173.8	1,543	13.4	13.0
Ann Arbor, Mich.	72,881	71	97.4	1,116	15.3	6.4
Annapolis, Md.	44,005	146	331.8	921	20.9	15.9
Ansonia, Conn.	66,915	103	153.9	949	14.2	10.8
Appleton, Wis.	81,170	94	115.8	932	11.5	10.1
Arlington (town), Mass.	46,210	60	129.8	557	12.1	10.7
Ashtabula, Ohio	70,910	80	112.8	1,074	15.1	7.5
Attleboro (town), Mass.	60,773	89	146.4	811	13.3	11.0
Augusta, Me.	60,155	97	161.3	1,428	23.7	6.8
Aurora, Ill.	127,425	142	111.4	1,674	13.1	8.5
Bangor, Me.	113,375	197	173.8	2,026	17.9	9.7
Barre, Vt.	48,690	100	205.4	697	14.3	14.4
Bath, Me.	55,010	85	154.5	825	15.0	10.3
Battle Creek, Mich.	106,501	125	117.4	1,695	15.9	7.4
Bellaire, Ohio	49,560	77	155.4	975	19.7	7.9
Belleville, Ill.	90,600	126	139.1	1,544	17.0	8.2
Beloit, Wis.	59,435	85	143.0	787	13.2	10.8
Bennington, Vt.	42,625	57	133.7	658	15.4	8.7
Berlin, N.H.	52,170	44	84.3	759	14.5	5.8
Beverly, Mass.	73,435	101	137.5	1,057	14.4	9.5
Biddeford, Me.	83,275	154	184.9	1,587	19.1	9.7
Bridgeton, N.J.	68,700	110	160.1	1,007	14.7	10.9
Bristol (town), Conn.	51,605	58	112.4	782	15.2	7.4
Brookline (town), Mass.	110,176	89	80.8	1,650	10.9	7.4
Burlington, Iowa	122,353	166	135.7	1,664	13.6	10.0
Burlington, Vt.	99,275	131	132.0	1,828	18.4	7.2
Carbondale, Pa.	71,280	61	85.6	1,261	17.7	4.8
Carlisle, Pa.	51,145	94	183.7	802	15.7	11.7
Central Falls, R.I.	94,670	146	154.2	1,570	16.6	9.3
Chicopee, Mass.	98,905	153	154.7	1,837	18.6	8.3
Chillicothe, Ohio	67,415	123	182.5	1,048	15.5	11.8
Clinton (town), Mass.	66,652	72	108.0	1,062	15.9	6.8
Cohoes, N.Y.	120,006	265	220.8	2,345	19.5	11.3
Columbia, Pa.	64,310	63	98.0	930	14.5	6.8
Columbus, Ind.	42,765	101	236.2	670	15.7	15.0

TABLE I.—*Continued.*

Cities.	Population (1901–05).	Deaths from Consumption.		Deaths from all Causes.		Per Cent. of Total Deaths due to Consumption.
		Number.	Rates. per 100,000 Population.	Number.	Rates. per 1,000 Population.	
Concord, N.H.	102,105	147	144.0	1,740	17.0	8.4
Corning, N.Y.	62,433	75	120.1	909	14.6	8.2
Cortland, N.Y.	51,610	38	73.6	637	12.3	6.0
Danbury (town), Conn. . .	97,370	181	185.9	1,615	16.6	11.2
Danvers (town), Mass. . .	44,271	126	284.6	1,205	27.2	10.5
Decatur, Ill.	110,787	153	138.1	1,528	13.8	10.0
Dover, N.H.	66,665	110	165.0	1,150	17.3	9.5
Dubois, Pa.	51,720	28	54.1	747	14.4	3.8
Dunkirk, N.Y.	68,821	56	81.4	1,105	16.1	5.1
Eau Claire, Wis.	91,245	120	131.5	1,033	11.3	11.6
Elkhart, Ind.	81,775	117	143.1	1,020	12.5	11.4
Elwood, Ind.	80,455	87	108.1	827	10.3	10.5
Escanaba, Mich.	53,552	90	166.2	1,003	18.7	8.9
Everett, Mass.	136,005	221	162.5	1,841	13.5	12.0
Findlay, Ohio	88,065	134	152.2	1,091	12.4	12.3
Flint, Mich.	72,692	67	92.0	1,020	14.0	6.6
Framingham (town), Mass. .	57,246	58	101.3	850	14.8	6.9
Frederick, Md.	48,130	130	270.1	1,059	22.0	12.3
Fresno, Cal.	64,825	163	251.4	1,295	20.0	12.6
Gardner (town), Mass. . .	57,660	73	126.6	865	15.0	8.4
Geneva, N.Y.	57,346	48	83.7	808	14.1	5.9
Glens Falls, N.Y.	69,173	97	140.2	1,058	15.3	9.2
Gloucester, Mass.	130,275	187	143.5	2,274	17.5	8.2
Gloversville, N.Y.	92,430	100	108.2	1,283	13.9	7.8
Green Bay, Wis.	105,930	129	121.8	1,466	13.8	8.8
Greenwich (town), Conn. .	63,920	74	115.8	1,026	16.1	7.2
Hamilton, Ohio	128,960	192	148.9	1,850	14.3	10.4
Hammond, Ind.	71,330	77	107.9	1,041	14.6	7.4
Harrison, N.J.	59,658	106	177.7	1,083	18.2	9.8
Hazleton, Pa.	75,285	67	89.0	1,095	14.5	6.1
Hudson, N.Y.	50,146	92	183.5	948	18.9	9.7
Huntington, Ind.	50,630	84	165.9	678	13.4	12.4
Hyde Park (town), Mass. .	70,016	105	150.0	918	13.1	11.5
Iron Mountain, Mich. . . .	43,748	47	107.4	637	14.6	7.4
Ironton, Ohio	60,135	148	246.1	1,003	16.7	14.7
Ironwood, Mich.	49,701	38	76.5	707	14.2	5.4
Ishpeming, Mich.	60,155	78	129.7	815	13.5	9.6
Ithaca, N.Y.	69,760	91	130.4	1,087	15.6	8.4
Jackson, Mich.	126,350	128	101.3	1,826	14.5	7.0
Jacksonville, Ill.	78,600	187	237.9	1,721	21.9	10.9
Jamestown, N.Y.	123,796	134	108.2	1,485	12.0	9.0
Jeffersonville, Ind.	54,035	138	255.4	1,063	19.7	13.0
Johnstown, N.Y.	49,555	52	104.9	661	13.3	7.9
Keene, N.H.	48,405	60	124.0	738	15.2	8.2
Key West, Fla.	95,720	288	300.9	2,079	21.7	13.9

TABLE I.—*Continued.*

Cities.	Population (1901–05).	Deaths from Consumption.		Deaths from all Causes.		Per Cent. of Total Deaths due to Consumption.
		Number.	Rates. per 100,000 Population.	Number.	Rates. per 1,000 Population.	
Kingston, N.Y.	125,300	242	193.1	2,204	17.6	11.0
Kokomo, Ind.	56,570	114	201.5	896	15.8	12.7
Laconia, N.H.	40,210	68	169.1	744	18.5	9.1
Lafayette, Ind.	93,385	209	223.8	1,656	17.7	12.6
Lansing, Mich.	96,640	55	56.9	1,170	12.1	4.7
Leadville, Col.	65,380	14	21.4	1,149	17.6	1.2
Leavenworth, Kan.	111,549	171	153.3	1,646	14.8	10.4
Leominster (town), Mass.	67,675	87	128.6	870	12.9	10.0
Lima, Ohio	126,127	198	157.0	1,778	14.1	11.1
Lockport, N.Y.	85,443	116	135.8	1,329	15.6	8.7
Logansport, Ind.	85,340	161	188.7	1,491	17.5	10.8
Lynchburg, Va.	106,750	269	252.0	2,199	20.6	12.2
Madison, Wis.	110,228	120	108.9	1,172	10.6	10.2
Mahanoy City, Pa.	70,850	40	56.3	1,549	21.9	2.6
Manchester (town), Conn.	56,575	84	148.5	684	12.1	12.2
Manitowoc, Wis.	61,768	97	157.0	813	13.2	11.9
Mankato, Minn.	54,183	75	138.4	743	13.7	10.1
Marietta, Ohio	74,360	85	114.3	992	13.3	8.6
Marinette, Wis.	78,454	82	104.5	917	11.7	8.9
Marion, Ind.	103,491	164	158.5	1,363	13.2	12.0
Marlboro, Mass.	69,435	101	145.5	996	14.3	10.2
Marquette, Mich.	52,565	75	142.7	798	15.2	9.4
Massillon, Ohio	62,495	56	89.6	748	12.0	7.5
Meadville, Pa.	54.618	43	78.7	783	14.3	5.5
Medford, Mass.	95,543	111	116.2	1,193	12.5	9.3
Melrose, Mass.	68,806	84	122.1	875	12.7	9.6
Menominee, Mich.	57,634	52	90.2	749	13.0	6.9
Michigan City, Ind.	80,355	99	123.2	1,044	13.0	9.5
Middletown, N.Y.	76,090	147	193.2	1,465	19.3	10.0
Middletown, Ohio	46,300	78	168.5	595	12.9	13.1
Middletown (town), Conn.	90,850	231	254.3	1,850	20.4	12.5
Milford (town), Mass.	59,065	81	137.1	872	14.8	9.3
Millville, N.J.	56,816	77	135.5	820	14.4	9.4
Montclair, N.J.	77,031	95	123.3	1,353	17.6	7.0
Morristown, N.J.	58,970	113	191.6	1,090	18.5	10.4
Mt. Carmel, Pa.	73,290	59	80.5	1,330	18.1	4.4
Mt. Vernon, N.Y.	117,243	135	115.1	1,659	14.2	8.1
Muncie, Ind.	120,969	196	162.0	1,830	15.1	10.7
Muscatine, Ia.	73,405	60	81.7	959	13.1	6.2
Muskegon, Mich.	104,385	106	101.5	1,308	12.5	8.1
Nashua, N.H.	126,375	206	162.2	1,998	15.8	10.3
Natick (town), Mass.	47,801	75	156.9	704	14.7	10 7
Naugatuck, Conn.	59,185	99	167.3	818	13.8	12.1
New Albany, Ind.	103,140	242	234.6	1,786	17.3	13.6
New Brunswick, N.J.	109,408	181	165.4	2,018	18.4	9.0

TABLE I.—*Continued.*

Cities.	Population (1901–05).	Deaths from Consumption.		Deaths from All Causes.		Per Cent. of Total Deaths due to Consumption.
		Number.	Rates. per 100,000 Population.	Number.	Rates. per 1,000 Population.	
New London, Conn. . . .	93,425	186	199.1	1,795	19.2	10.4
New Rochelle, N.Y. . . .	90,598	86	94.9	1,226	13.5	7.0
Newark, Ohio	96,620	136	140.8	1,409	14.6	9.6
Newburg, N.Y.	128,840	286	221.9	2,408	18.7	11.9
Newburyport, Mass. . . .	72,978	111	152.1	1,392	19.1	8.0
Newport, Ky.	146,575	256	174.7	2,319	15.8	11.1
Newport, R.I.	119,996	170	141.7	1,909	15.9	8.9
Niagara Falls, N.Y.	118,210	118	99.8	1,918	16.2	6.2
Norristown, Pa.	115,030	317	275.6	2,819	24.5	11.2
North Adams, Mass. . . .	114,850	166	144.5	1,794	15.6	9.3
Northampton, Mass. . . .	97,155	125	128.7	1,548	15.9	8.1
Norwalk (town), Conn. . .	102,945	157	152.5	1,580	15.3	10.0
Norwich (town), Conn. . .	125,570	202	160.9	2,220	17.7	9.1
Ogdensburg, N.Y.	73,806	215	291.3	1,720	23.3	12.5
Olean, N.Y.	49,158	27	54.9	565	11.5	4.8
Orange, N.J.	126,585	367	289.9	2,551	20.2	14.4
Ottawa, Ill.	54,440	67	123.1	710	13.0	9.5
Owosso, Mich.	45,162	37	81.9	441	9.8	8.4
Paducah, Ky.	104,775	343	327.4	2,269	21.7	15.1
Peabody (town), Mass. . .	62,340	85	136.3	876	14.1	9.7
Peekskill, N.Y.	60,313	101	167.5	1,069	17.7	9.5
Perth Amboy, N.J.	113,081	86	76.1	1,463	12.9	5.9
Peru, Ind.	54,885	65	118.4	649	11.8	10.0
Petersburg, Va.	109,050	381	348.5	2,877	26.4	13.2
Phillipsburg, N.J.	60,160	63	104.7	781	13.0	8.1
Pittsfield, Mass.	118,535	147	124.0	1,871	15.8	7.8
Plainfield, N.J.	86,140	164	190.4	1,375	16.0	11.9
Plymouth, Pa.	74,710	22	29.4	1,143	15.3	1.9
Plymouth (town), Mass. . .	52,538	61	116.1	745	14.2	8.2
Pontiac, Mich.	53,025	44	83.0	926	17.5	4.7
Port Huron, Mich.	99,051	55	55.5	1,262	12.7	4.4
Port Jervis, N.Y.	47,855	83	173.4	829	17.3	10.0
Portsmouth, N.H.	54,400	93	171.0	976	17.9	9.6
Portsmouth, Ohio	96,460	203	210.4	1,478	15.3	13.7
Pottstown, Pa.	69,095	108	156.3	1,049	15.2	10.3
Pottsville, Pa.	80,935	86	106.3	1,448	17.9	5.9
Poughkeepsie, N.Y.	123,493	199	161.1	2,256	18.3	8.8
Pueblo, Col.	146,685	496	338.1	3,853	26.3	12.9
Quincy, Mass.	132,023	187	141.6	1,808	13.7	10.3
Raleigh, N.C.	69,670	239	343.0	1,695	24.3	14.1
Revere (town), Mass. . . .	58,765	63	107.2	736	12.5	8.6
Richmond, Ind.	93,960	165	175.6	1,556	16.6	10.6
Rochester, N.H.	43,935	98	223.1	691	15.7	14.2
Rockland, Me.	40,750	87	213.5	771	18.9	11.3
Rome, N.Y.	82,671	151	182.7	1,436	17.4	10.5

TABLE I.—*Continued.*

Cities.	Population (1901–05).	Deaths from Consumption.		Deaths from all Causes.		Per Cent of Total Deaths due to Consumption.
		Number.	Rates. per 100,000 Population.	Number.	Rates. per 1,000 Population.	
Rutland, Vt.	58,650	90	153.5	1,080	18.4	8.3
Sacramento, Cal.	150,760	431	285.9	3,075	20.4	14.0
San Diego, Cal.	92,100	393	426.7	2,066	22.4	19.0
San José, Cal.	112,660	295	261.8	1,809	16.1	16.3
Saratoga Springs, N.Y. . .	63,815	135	211.5	1,374	21.5	9.8
Sault Ste. Marie, Mich. . .	56,080	55	97.9	1,006	17.9	5.5
South Bethlehem, Pa. . . .	70,615	96	135.9	1,112	15.7	8.7
Southbridge (town), Mass. .	53,050	73	137.6	882	16.6	8.3
Stamford (town), Conn. . .	98,905	155	156.7	1,968	19.9	7.9
Steelton, Pa.	65,011	107	164.6	1,096	16.9	9.7
Stonington (town), Conn. .	44,740	67	149.8	752	16.8	8.9
Tiffin, Ohio	55,105	87	157.9	742	13.5	11.7
Torrington (town), Conn. .	71,880	91	126.6	836	11.6	10.9
Traverse City, Mich.	53,896	88	163.3	985	18.3	8.9
Union, N.J.	81,386	126	154.8	1,358	16.7	9.3
Vernon (town), Conn. . .	41,920	45	107.3	591	14.1	7.6
Vincennes, Ind.	53,954	112	207.6	938	17.4	11.9
Wabash, Ind.	46,405	72	155.2	543	11.7	13.2
Wakefield (town), Mass. . .	49,381	90	182.3	649	13.1	13.9
Wallingford (town), Conn. .	48,635	55	113.1	623	12.8	8.8
Waltham, Mass.	125,806	182	144.7	1,722	13.7	10.5
Ware (town), Mass.	42,306	78	184.4	647	15.3	12.1
Washington, Ind.	46,490	100	215.1	648	13.9	15.5
Watertown, N.Y.	119,220	114	95.6	1,772	14.9	6.4
Watertown (town), Mass. .	53,183	60	112.8	651	12.2	9.2
Watervliet, N.Y.	72,085	128	177.6	1,207	16.7	10.6
Webster (town), Mass. . .	47,660	63	132.2	739	15.5	8.5
Westfield (town), Mass. . .	65,451	94	143.6	1,073	16.4	8.8
Weymouth (town), Mass. .	57,401	87	151.6	850	14.8	10.2
Williamsport, Pa.	146,230	170	116.3	2,055	14.1	8.2
Wilmington, N.C.	106,260	249	234.3	2,873	27.0	8.7
Windham (town), Conn. . .	50,850	109	214.4	917	18.0	11.9
Winona, Minn.	100,430	107	106.5	1,241	12.4	8.6
Woburn, Mass.	71,711	126	175.7	1,086	15.1	11.6
Total (209 cities)	16,453,012	25,927	157.6	264,071	16.1	9.8

TABLE II.

Percentage of Children and Negroes in 209 Small Cities of the United States and Altitude of the Cities.

(*Census of* 1900.)

Cities.	Total Population.	Children (Ages 0–4).		Negroes.		Altitude in Feet.
		Number.	Per Cent.	Number.	Per Cent.	
Adams (town), Mass. . . .	11,134	1,303	11.7	18	0.16	799
Alameda, Cal.	16,464	1,336	8.1	144	1.00	12
Alexandria, Va.	14,528	1,439	9.9	4,533	31.20	50
Amesbury (town), Mass. .	9,473	848	9.0	23	0.24	26
Amsterdam, N.Y.	20,929	2,044	9.8	94	0.45	275
Anderson, Ind.	20,178	(?)	(?)	680	3.37	875
Ann Arbor, Mich.	14,509	893	6.2	359	2.47	791
Annapolis, Md.	8,525	782	9.2	3,002	35.21	16
Ansonia, Conn.	12,681	1,624	12.8	501	3.95	31
Appleton, Wis.	15,085	1,846	12.2	18	0.12	714
Arlington (town), Mass. . .	8,603	961	11.2	75	0.87	46
Ashtabula, Ohio	12,949	1,685	13.0	75	0.58	654
Attleboro (town), Mass. . .	11,335	1,023	9.0	111	0.98	133
Augusta, Me.	11,683	1,034	8.8	51	0.44	47
Aurora, Ill.	24,147	2,395	9.9	211	0.87	661
Bangor, Me.	21,850	1,831	8.4	176	0.81	21
Barre, Vt.	8,448	1,095	13.0	3	0.00	515
Bath, Me.	10,477	967	9.2	40	0.38	7
Battle Creek, Mich. . . .	18,563	1,426	7.7	527	2.84	820
Bellaire, Ohio	9,912	1,081	10.9	428	4.32	670
Belleville, Ill.	17,484	1,835	10.5	230	1.32	502
Beloit, Wis.	10,436	978	9.4	66	0.63	745
Bennington (town), Vt. . .	8,033	710	8.8	38	0.67	726
Berlin, N.H.	8,886	1,465	16.5	—	—	1,013
Beverly, Mass.	13,884	1,215	8.8	50	0.36	23
Biddeford, Me.	16,145	1,762	10.9	1	0.00	75
Bridgeton, N.J.	13,913	1,249	9.0	701	5.04	42
Bristol, Conn.	9,643	997	10.3	19	0.30	332
Brookline (town), Mass. . .	19,935	1,650	8.3	161	0.81	10
Burlington, Ia.	23,201	2,031	8.8	403	1.74	502
Burlington, Vt.	18,640	1,781	9.6	115	0.62	190
Carbondale, Pa.	13,536	1,525	11.3	4	0.00	1,078
Carlisle, Pa.	9,626	786	8.2	1,148	11.93	469
Central Falls City, R.I. . .	18,167	2,214	12.2	62	0.34	88
Chicopee, Mass.	19,167	2,481	12.9	10	0.00	84
Chillicothe, Ohio	12,976	1,123	8.7	986	7.60	632
Clinton (town), Mass. . . .	13,667	1,462	10.7	24	0.18	262
Cohoes, N.Y.	23,910	2,228	9.3	15	0.00	155
Columbia, Pa.	12,316	1,395	11.3	421	3.42	255
Columbus, Ind.	8,130	753	9.3	224	2.76	631
Concord, N.H.	19,632	1,677	8.5	58	0.30	264
Corning, N.Y.	11,061	1,078	9.7	119	1.07	937
Cortland, N.Y.	9,014	695	7.7	51	0.57	1,125

TABLE II.—*Continued.*

Cities.	Total Population.	Children (Ages 0–4).		Negroes.		Altitude in Feet.
		Number.	Per Cent.	Number.	Per Cent.	
Danbury (town), Conn. . .	19,477	1,717	8.8	241	1.46	371
Danvers (town), Mass. . .	8,542	706	8.3	10	0.11	42
Decatur, Ill.	20,754	2,004	9.7	620	2.99	679
Dover, N.H.	13,207	1,150	8.7	15	0.11	77
Dubois, Pa.	9,375	1,317	14.0	24	0.26	1,399
Dunkirk, N.Y.	11,616	1,401	12.0	10	0.09	613
Eau Claire, Wis.	17,517	2,013	11.5	11	0.06	776
Elkhart, Ind.	15,184	(?)	(?)	35	0.24	754
Elwood, Ind.	12,950	(?)	(?)	5	0.00	860
Escanaba, Mich.	9,549	1,262	13.2	25	0.26	597
Everett, Mass.	24,336	2,850	11.7	634	2.61	12
Findlay, Ohio	17,613	1,634	9.3	294	1.67	780
Flint, Mich.	13,103	857	6.5	257	1.96	716
Framingham (town), Mass. .	11,302	954	8.4	38	0.33	180
Frederick, Md.	9,296	927	10.0	1,535	16.51	271
Fresno, Cal.	12,470	1,052	8.4	291	2.33	287
Gardner (town), Mass. . .	10,813	1,185	11.0	53	0.49	1,030
Geneva, N.Y.	10,433	877	8.4	193	1.85	471
Glens Falls, N.Y.	12,613	1,095	8.7	33	0.26	279
Gloucester, Mass.	26,121	2,622	10.0	39	0.15	52
Gloversville, N.Y.	18,349	1,268	6.9	216	1.18	821
Green Bay, Wis.	18,684	2,418	12.9	33	0.18	604
Greenwich (town), Conn. .	12,172	1,337	11.0	356	2.92	28
Hamilton, Ohio	23,914	2,458	10.3	347	1.45	597
Hammond, Ind.	12,376	(?)	(?)	17	0.14	593
Harrison, N.J.	10,596	1,293	12.2	49	0.46	38
Hazleton, Pa.	14,230	1,794	12.6	14	0.10	1,624
Hudson, N.Y.	9,528	664	7.0	424	4.45	67
Huntington, Ind.	9,491	(?)	(?)	8	0.08	742
Hyde Park (town), Mass. .	13,244	1,313	9.9	116	0.87	59
Iron Mountain, Mich. . . .	9,242	1,510	16.3	5	0.00	1,160
Ironton, Ohio	11,868	1,169	9.8	924	7.79	529
Ironwood, Mich.	9,705	1,733	17.9	1	0.00	1,500
Ishpeming, Mich	13,255	1,918	14.5	—	—	1,434
Ithaca, N.Y.	13,136	836	6.4	364	2.77	611
Jackson, Mich.	25,180	1,951	7.7	473	1.88	942
Jacksonville, Ill.	15,078	1,026	6.8	997	6.61	603
Jamestown, N.Y.	22,892	2,134	9.3	77	0.34	1,323
Jeffersonville, Ind.	10,774	1,063	9.9	1,818	1.69	451
Johnstown, N.Y.	10,130	796	7.9	108	1.07	650
Keene, N.H.	9,165	781	8.5	5	0.00	497
Key West, Fla.	17,114	2,141	12.5	5,562	32.50	22
Kingston, N.Y.	24,535	2,233	9.1	545	2.22	197
Kokomo, Ind.	10,609	(?)	(?)	359	3.38	806
Laconia, N.H.	8,042	643	8.0	21	0.26	507
Lafayette, Ind.	18,116	1,483	8.2	344	1.90	577
Lansing, Mich.	16,485	1,302	7.9	323	1.96	843

TABLE II.—*Continued.*

Cities.	Total Population.	Children (Ages 0–4).		Negroes.		Altitude in Feet.
		Number.	Per Cent.	Number.	Per Cent.	
Leadville, Col.	12,455	1,140	9.2	195	1.57	10,187
Leavenworth, Kan.	20,735	1,994	9.6	2,925	14.10	780
Leominster (town), Mass.	12,392	1,142	9.2	75	0.61	404
Lima, Ohio	21,723	2,378	10.9	731	3.37	876
Lockport, N.Y.	16,581	1,466	8.8	160	0.96	541
Logansport, Ind.	16,204	(?)	(?)	167	1.03	597
Lynchburg, Va.	18,891	1,964	10.4	8,254	43.69	607
Madison, Wis.	19,164	1,703	8.9	69	0.36	888
Mahanoy City, Pa.	13,504	1,952	14.5	4	0.00	1,236
Manchester (town), Conn.	10,601	1,153	10.9	43	0.41	177
Manitowoc, Wis.	11,786	1,472	12.5	3	0.59	595
Mankato, Minn.	10,599	1,100	10.4	7	0.00	775
Marietta, Ohio	13,348	1,213	9.1	361	2.70	618
Marinette, Wis.	16,195	2,310	14.3	1	0.00	597
Marion, Ind.	17,337	(?)	(?)	650	3.74	812
Marlboro, Mass.	13,609	1,243	9.1	31	0.23	375
Marquette, Mich.	10,058	1,197	11.9	62	0.42	642
Massillon, Ohio	11,944	1,236	10.3	83	0.69	975
Meadville, Pa.	10,291	774	7.5	173	1.68	1,078
Medford, Mass.	18,244	1,870	10.3	244	1.34	13
Melrose, Mass.	12,962	1,204	9.3	130	1.00	59
Menominee, Mich.	12,818	1,930	15.1	—	—	594
Michigan City, Ind.	14,850	1,634	11.0	197	1.33	608
Middletown, N.Y.	14,522	1,107	7.6	380	2.62	631
Middletown, Ohio	9,215	902	9.8	314	3.41	664
Middletown (town), Conn.	17,486	1,469	8.4	127	1.33	55
Milford (town), Mass.	11,376	1,035	9.1	24	0.21	266
Millville, N.J.	10,583	1,062	10.0	139	1.31	35
Montclair, N.J.	13,962	1,341	9.6	1,344	9.63	241
Morristown, N.J.	11,267	1,075	9.5	815	7.23	372
Mt. Carmel, Pa.	13,179	2,153	16.3	10	0.08	1,056
Mt. Vernon, N.Y.	21,228	2,538	12.0	516	2.43	114
Muncie, Ind.	20,942	2,004	9.6	739	3.53	945
Muscatine, Ia.	14,073	1,436	10.2	125	0.89	547
Muskegon, Mich.	20,818	2,078	10.0	23	0.11	599
Nashua, N.H.	23,898	2,550	10.7	62	0.26	138
Natick (town), Mass.	9,488	838	8.8	52	0.55	164
Naugatuck, Conn.	10,541	1,426	13.5	31	0.29	194
New Albany, Ind.	20,628	(?)	(?)	1,905	9.23	442
New Brunswick, N.J.	20,006	1,890	9.4	755	3.77	61
New London, Conn.	17,548	1,571	9.0	378	2.15	27
New Rochelle, N.Y.	14,720	1,826	12.4	777	5.28	72
Newark, Ohio	18,157	1,774	9.8	300	1.65	822
Newburg, N.Y.	24,943	2,230	8.9	558	2.24	69
Newburyport, Mass.	14,478	1,243	8.6	97	0.67	39
Newport, Ky.	28,301	2,806	9.9	424	1.50	507
Newport, R.I.	22,034	2,109	9.6	1,613	7.32	25

TABLE II.—*Continued.*

Cities.	Total Population.	Children (Ages 0–4).		Negroes.		Altitude in Feet.
		Number.	Per Cent.	Number.	Per Cent.	
Niagara Falls, N.Y.	19,457	1,945	10.0	344	1.77	578
Norristown, Pa.	22,265	1,749	7.9	728	3.27	83
North Adams, Mass. . . .	24,200	2,896	12.0	90	0.37	706
Northampton, Mass. . . .	18,643	1,623	8.7	108	0.58	124
Norwalk (town), Conn. . .	19,932	1,810	9.1	189	3.09	28
Norwich (town), Conn. . .	24,637	2,316	9.4	544	3.15	33
Ogdensburg, N.Y.	12,633	1,261	10.0	23	0.18	276
Olean, N.Y.	9,462	867	9.2	122	1.29	1,435
Orange, N.J.	24,141	2,754	11.4	1,903	7.88	184
Ottawa, Ill.	10,588	998	9.4	34	0.32	496
Owosso, Mich.	8,696	694	8.0	22	0.25	740
Paducah, Ky.	19,446	1,846	9.5	5,814	29.90	344
Peabody (town), Mass. . .	11,523	1,194	10.4	38	0.33	19
Peekskill, N.Y.	10,358	1,007	9.7	243	2.34	11
Perth Amboy, N.J.	17,699	2,620	14.8	89	0.50	55
Peru, Ind.	8,463	765	9.0	67	0.79	643
Petersburg, Va.	21,810	2,195	10.1	10,751	49.29	58
Phillipsburg, N.J.	10,052	914	9.1	36	0.36	207
Pittsfield, Mass.	21,766	2,023	9.3	277	1.27	1,026
Plainfield, N.J.	15,369	1,461	9.5	1,450	9.43	102
Plymouth, Pa.	13,649	1,990	14.5	25	0.18	535
Plymouth (town), Mass. . .	9,592	968	10.1	146	1.52	38
Pontiac, Mich.	9,769	784	8.0	151	1.55	933
Port Huron, Mich.	19,158	1,741	9.1	69	0.36	596
Port Jervis, N.Y.	9,385	842	9.0	119	1.27	451
Portsmouth, N.H.	10,637	891	8.4	101	0.94	14
Portsmouth, Ohio.	17,870	1,773	9.9	947	5.30	507
Pottstown, Pa.	13,696	1,428	10.4	292	2.13	144
Pottsville, Pa.	15,710	1,526	9.7	168	1.07	618
Poughkeepsie, N.Y.	24,209	1,926	8.0	623	2.59	138
Pueblo, Col.	28,157	2,851	10.1	1,213	4.31	4,669
Quincy, Mass.	23,899	2,780	11.6	27	0.11	40
Raleigh, N.C.	13,643	1,458	10.7	5,721	41.93	352
Revere (town), Mass. . . .	10,395	1,170	11.2	43	0.41	16
Richmond, Ind.	18,226	1,403	7.7	1,009	5.54	958
Rochester, N.H.	8,466	823	9.7	3	0.00	229
Rockland, Me.	8,150	564	6.9	31	0.38	(?)
Rome, N.Y.	15,343	1,369	8.9	89	0.58	436
Rutland, Vt.	11,499	1,007	8.7	54	0.47	562
Sacramento, Cal.	29,282	2,130	7.3	402	1.37	30
San Diego, Cal.	17,700	1,247	7.0	313	1.77	30
San José, Cal.	21,500	1,480	6.9	209	0.97	98
Saratoga Springs, N.Y. . .	12,409	987	7.9	619	4.99	294
Sault Ste. Marie, Mich. . .	10,538	1,170	11.1	22	0.21	608
South Bethlehem, Pa. . . .	13,241	1,676	12.7	115	0.87	239
Southbridge (town), Mass. .	10,025	1,160	11.6	29	0.29	490
Stamford (town), Conn. . .	18,839	1,872	9.9	256	1.60	34

TABLE II.—*Continued.*

Cities.	Total Population.	Children (Ages 0–4).		Negroes.		Altitude in Feet.
		Number.	Per Cent.	Number.	Per Cent.	
Steelton, Pa.	12,086	1,296	10.7	1,508	12.47	308
Stonington (town), Conn. .	8,540	871	10.2	141	1.65	7
Tiffin, Ohio	10,989	913	8.3	44	0.40	753
Torrington (town), Conn. .	12,453	1,614	13.0	67	0.80	593
Traverse City, Mich. . . .	9,407	837	8.9	8	0.09	599
Union, N.J.	15,187	1,895	12.5	7	0.00	140
Vernon (town), Conn. . . .	8,483	795	9.4	28	0.38	407
Vincennes, Ind.	10,249	949	9.3	432	4.21	429
Wabash, Ind.	8,618	(?)	(?)	134	1.55	727
Wakefield (town), Mass. . .	9,290	884	9.5	25	0.27	102
Wallingford (town), Conn. .	9,001	1,033	11.5	21	0.31	75
Waltham, Mass.	23,481	2,023	8.6	51	0.22	79
Ware (town), Mass.	8,263	890	10.8	—	—	488
Washington, Ind.	8,551	(?)	(?)	255	2.98	483
Watertown, N.Y.	21,696	1,876	8.7	75	0.34	454
Watertown (town), Mass. .	9,706	931	9.6	53	0.55	19
Watervliet, N.Y.	14,321	1,325	9.3	59	4.12	32
Webster (town), Mass. . .	8,804	1,141	13.0	32	0.36	440
Westfield (town), Mass. . .	12,310	1,225	10.0	81	0.66	149
Weymouth (town), Mass. .	11,324	955	8.4	40	0.35	30
Williamsport, Pa.	28,757	2,600	9.0	1,142	3.97	525
Wilmington, N.C.	20,796	2,265	10.9	10,407	49.61	52
Windham (town), Conn. . .	10,137	952	9.4	74	0.83	247
Winona, Minn.	19,714	2,326	11.8	30	0.15	651
Woburn, Mass.	14,254	1,566	11.0	261	1.83	98
Totals	3,099,286	293,246	9.5	104,839	3.57	

TABLE III.

Mortality from Consumption in 209 Small Cities of the United States, 1901–05.

(*The Cities are arranged in the order of the Death-rates per* 100,000 *of Population.*)

Cities.	Rates.	Cities.	Rates.
San Diego, Cal.	426.7	Paducah, Ky.	327.4
Petersburg, Va.	348.5	Key West, Fla.	300.9
Raleigh, N.C.	343.0	Ogdensburg, N.Y.	291.3
Pueblo, Col.	338.1	Orange, N.J.	289.9
Annapolis, Md.	331.8	Sacramento, Cal.	285.9

TABLE III.—*Continued.*

Cities.	Rates.	Cities.	Rates.
Danvers (town), Mass.	284.6	Peekskill, N.Y.	167.5
Norristown, Pa.	275.6	Adams (town), Mass.	167.4
Frederick, Md.	270.1	Naugatuck, Conn.	167.3
San José, Cal.	261.8	Escanaba, Mich.	166.2
Alexandria, Va.	259.2	Huntington, Ind.	165.9
Jeffersonville, Ind.	255.4	New Brunswick, N.J.	165.4
Middletown (town), Conn.	254.3	Dover, N.H.	165.0
Lynchburg, Va.	252.0	Steelton, Pa.	164.6
Fresno, Cal.	251.4	Traverse City, Mich.	163.3
Ironton, Ohio	246.1	Everett, Mass.	162.5
Jacksonville, Ill.	237.9	Nashua, N.H.	162.2
Columbus, Ind.	236.2	Muncie, Ind.	162.0
New Albany, Ind.	234.6	Augusta, Me.	161.3
Wilmington, N.C.	234.3	Poughkeepsie, N.Y.	161.1
Lafayette, Ind.	223.8	Norwich (town), Conn.	160.9
Rochester, N.H.	223.1	Bridgeton, N.J.	160.1
Newburg, N.Y.	221.9	Marion, Ind.	158.5
Cohoes, N.Y.	220.8	Tiffin, Ohio	157.9
Washington, Ind.	215.1	Lima, Ohio	157.0
Windham (town), Conn.	214.4	Manitowoc, Wis.	157.0
Rockland, Me.	213.5	Natick (town), Mass.	156.9
Saratoga Springs, N.Y.	211.5	Stamford, Conn.	156.7
Portsmouth, Ohio	210.4	Pottstown, Pa.	156.3
Vincennes, Ind.	207.6	Bellaire, Ohio	155.4
Barre, Vt.	205.4	Wabash, Ind.	155.2
Kokomo, Ind.	201.5	Union, N.J.	154.8
New London, Conn.	199.1	Chicopee, Mass.	154.7
Middletown, N.Y.	193.2	Bath, Me.	154.5
Kingston, N.Y.	193.1	Central Falls, R.I.	154.2
Morristown, N.J.	191.6	Ansonia, Conn.	153.9
Plainfield, N.J.	190.4	Rutland, Vt.	153.5
Logansport, Ind.	188.7	Leavenworth, Kan.	153.3
Danbury (town), Conn.	185.9	Norwalk (town), Conn.	152.5
Biddeford, Me.	184.9	Findlay, Ohio	152.2
Ware (town), Mass.	184.4	Newburyport, Mass.	152.1
Carlisle, Pa.	183.7	Weymouth (town), Mass.	151.6
Hudson, N.Y.	183.5	Hyde Park (town), Mass.	150.0
Rome, N.Y.	182.7	Stonington (town), Conn.	149.8
Chillicothe, Ohio	182.5	Hamilton, Ohio	148.9
Wakefield (town), Mass.	182.3	Manchester (town), Conn.	148.5
Amesbury (town), Mass.	178.1	Amsterdam, N.Y.	147.3
Harrison, N.J.	177.7	Attleboro (town), Mass.	146.4
Watervliet, N.Y.	177.6	Marlboro, Mass.	145.5
Woburn, Mass.	175.7	Waltham, Mass.	144.7
Richmond, Ind.	175.6	North Adams, Mass.	144.5
Newport, Ky.	174.7	Concord, N.H.	144.0
Anderson, Ind.	173.8	Westfield (town), Mass.	143.6
Bangor, Me.	173.8	Gloucester, Mass.	143.5
Port Jervis, N.Y.	173.4	Elkhart, Ind.	143.1
Portsmouth, N.H.	171.0	Beloit, Wis.	143.0
Laconia, N.H.	169.1	Marquette, Mich.	142.7
Middletown, Ohio	168.5	Newport, R.I.	141.7

TABLE III.—*Continued.*

Cities.	Rates.	Cities.	Rates.
Quincy, Mass.	141.6	Madison, Wis.	108.9
Newark, Ohio	140.8	Gloversville, N.Y.	108.2
Glens Falls, N.Y.	140.2	Jamestown, N.Y.	108.2
Belleville, Ill.	139.1	Elwood, Ind.	108.1
Mankato, Minn.	138.4	Clinton (town), Mass.	108.0
Decatur, Ill.	138.1	Hammond, Ind.	107.9
Southbridge (town), Mass.	137.6	Iron Mountain, Mich.	107.4
Beverly, Mass.	137.5	Vernon (town), Conn.	107.3
Milford (town), Mass.	137.1	Revere (town), Mass.	107.2
Peabody (town), Mass.	136.3	Winona, Minn.	106.5
South Bethlehem, Pa.	135.9	Pottsville, Pa.	106.3
Lockport, N.Y.	135.8	Johnstown, N.Y.	104.9
Burlington, Ia.	135.7	Phillipsburg, N.J.	104.7
Millville, N.J.	135.5	Marinette, Wis.	104.5
Bennington (town), Vt.	133.7	Muskegon, Mich.	101.5
Webster (town), Mass.	132.2	Framingham (town), Mass.	101.3
Burlington, Vt.	132.0	Jackson, Mich.	101.3
Eau Claire, Wis.	131.5	Niagara Falls, N.Y.	99.8
Ithaca, N.Y.	130.4	Columbia, Pa.	98.0
Arlington (town), Mass,	129.8	Sault Ste. Marie, Mich.	97.9
Ishpeming, Mich.	129.7	Ann Arbor, Mich.	97.4
Northampton, Mass.	128.7	Watertown, N.Y.	95.6
Leominster (town), Mass.	128.6	New Rochelle, N.Y.	94.9
Gardner (town), Mass.	126.6	Flint, Mich.	92.0
Torrington (town), Conn.	126.6	Menominee, Mich.	90.2
Alameda, Cal.	126.3	Massillon, Ohio	89.6
Keene, N.H.	124.0	Hazleton, Pa.	89.0
Pittsfield, Mass.	124.0	Carbondale, Pa.	85.6
Montclair, N.J.	123.3	Berlin, N.H.	84.3
Michigan City, Ind.	123.2	Geneva, N.Y.	83.7
Ottawa, Ill.	123.1	Pontiac, Mich.	83.0
Melrose, Mass.	122.1	Owosso, Mich.	81.9
Green Bay, Wis.	121.8	Muscatine, Ia.	81.7
Corning, N.Y.	120.1	Dunkirk, N.Y.	81.4
Peru, Ind.	118.4	Brookline (town), Mass.	80.8
Battle Creek, Mich.	117.4	Mt. Carmel, Pa.	80.5
Williamsport, Pa.	116.3	Meadville, Pa.	78.7
Medford, Mass.	116.2	Ironwood, Mich.	76.5
Plymouth (town), Mass.	116.1	Perth Amboy, N.J.	76.1
Appleton, Wis.	115.8	Cortland, N.Y.	73.6
Greenwich (town), Conn.	115.8	Lansing, Mich.	56.9
Mt. Vernon, N.Y.	115.1	Mahanoy City, Pa.	56.3
Marietta, Ohio	114.3	Port Huron, Mich.	55.5
Wallingford, Conn.	113.1	Olean, N.Y.	54.9
Ashtabula, Ohio	112.8	Dubois, Pa.	54.1
Watertown, Mass.	112.8	Plymouth, Pa.	29.4
Bristol, Conn.	112.4	Leadville, Col.	21.4
Aurora, Ill.	111.4		